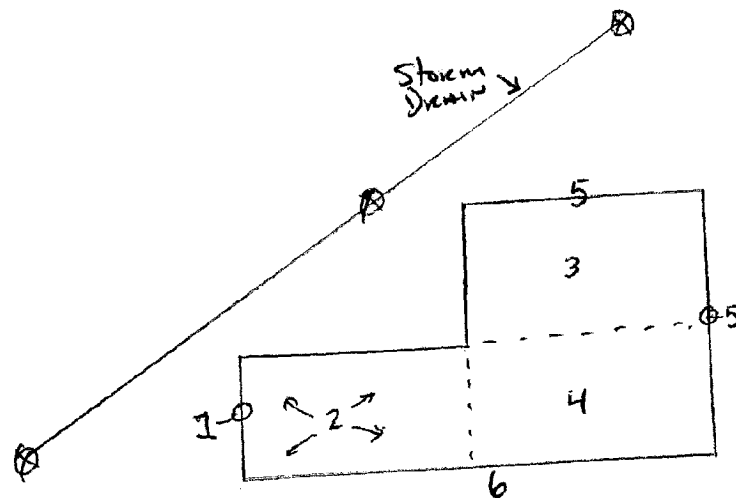


Existing Bid.



Sample ID	Results
8195-1	420
8195-2	420
8195-3	ND
8195-4	130
8195-5	1,100
8195-6	510

KCIA  
 Sample Locations Map  
 11/24/98  
 NOT TO SCALE  
 Olympus well 8195

KCSlip4 35932

SEA402477

**Sound Analytical Services, Inc.**  
ANALYTICAL & ENVIRONMENTAL CHEMISTS  
4813 Pacific Hwy East • Tacoma, WA 98424  
(253) 922-2310 • FAX (253) 922-5047  
e-mail: SoundL@aol.com



DEC 03 REC'D

**TRANSMITTAL MEMORANDUM**

DATE: November 25, 1998

TO: Jim Bonter  
Olympus Environmental, Inc.  
P.O. Box 1064  
Kent, WA 98035

PROJECT: King County International Airport

REPORT NUMBER: 77075

Enclosed are the test results for six samples received at Sound Analytical Services on November 16, 1998.

The report consists of this transmittal memo, analytical results, quality control reports, a copy of the chain-of-custody, a list of data qualifiers and analytical narrative when applicable, and a copy of any requested raw data.

Should there be any questions regarding this report, please contact me at (253) 922-2310.

Sincerely,

A handwritten signature in black ink, appearing to read 'Tom Boyden', written in a cursive style.

Tom Boyden  
Project Manager

KCSlip4 35933

SEA402478

# SOUND ANALYTICAL SERVICES, INC.

Client Name	Olympus Environmental, Inc.
Client ID:	8195-1
Lab ID:	77075-01
Date Received:	11/16/98
Date Prepared:	11/18/98
Date Analyzed:	11/21/98
% Solids	85.84

## Extended Diesel Range by WTPH-D Modified

Surrogate	% Recovery	Flags	Recovery Limits	
			Low	High
o-terphenyl	82		50	150

Sample results are on a dry weight basis.

Analyte	Result (mg/kg)	PQL	Flags
Diesel (>nC12-nC24)	71	22	X1
Motor Oil (>nC24-nC32)	420	44	

X1 - Chromatogram suggests this might be heavy oil

# SOUND ANALYTICAL SERVICES, INC.

Client Name	Olympus Environmental, Inc.
Client ID:	8195-2
Lab ID:	77075-02
Date Received:	11/16/98
Date Prepared:	11/18/98
Date Analyzed:	11/21/98
% Solids	83.02

## Extended Diesel Range by WTPH-D Modified

Surrogate	% Recovery	Flags	Recovery Limits	
			Low	High
o-terphenyl	85		50	150

Sample results are on a dry weight basis.

Analyte	Result (mg/kg)	PQL	Flags
Diesel (>nC12-nC24)	69	22	X1
Motor Oil (>nC24-nC32)	420	44	

X1 - Chromatogram suggests this might be heavy oil

# SOUND ANALYTICAL SERVICES, INC.

Client Name	Olympus Environmental, Inc.
Client ID:	8195-3
Lab ID:	77075-03
Date Received:	11/16/98
Date Prepared:	11/18/98
Date Analyzed:	11/19/98
% Solids	74.31

## Extended Diesel Range by WTPH-D Modified

Surrogate	% Recovery	Flags	Recovery Limits	
			Low	High
o-terphenyl	84		50	150

Sample results are on a dry weight basis.

Analyte	Result (mg/kg)	PQL	Flags
Diesel (>nC12-nC24)	ND	25	
Motor Oil (>nC24-nC32)	ND	49	

# SOUND ANALYTICAL SERVICES, INC.

Client Name	Olympus Environmental, Inc.
Client ID:	8195-4
Lab ID:	77075-04
Date Received:	11/16/98
Date Prepared:	11/18/98
Date Analyzed:	11/19/98
% Solids	72.72

## Extended Diesel Range by WTPH-D Modified

Surrogate	% Recovery	Flags	Recovery Limits	
			Low	High
o-terphenyl	89		50	150

Sample results are on a dry weight basis.

Analyte	Result (mg/kg)	PQL	Flags
Diesel (>nC12-nC24)	ND	27	
Motor Oil (>nC24-nC32)	130	53	

# SOUND ANALYTICAL SERVICES, INC.

Client Name	Olympus Environmental, Inc.
Client ID:	8195-5
Lab ID:	77075-05
Date Received:	11/16/98
Date Prepared:	11/18/98
Date Analyzed:	11/20/98
% Solids	88.18

## Extended Diesel Range by WTPH-D Modified

Surrogate	% Recovery	Flags	Recovery Limits	
			Low	High
o-terphenyl	94		50	150

Sample results are on a dry weight basis.

Analyte	Result (mg/kg)	PQL	Flags
Diesel (>nC12-nC24)	160	110	X1
Motor Oil (>nC24-nC32)	1100	220	

X1 - Chromatogram suggests this might be heavy oil

# SOUND ANALYTICAL SERVICES, INC.

Client Name	Olympus Environmental, Inc.
Client ID:	8195-6
Lab ID:	77075-06
Date Received:	11/16/98
Date Prepared:	11/18/98
Date Analyzed:	11/21/98
% Solids	84.21

## Extended Diesel Range by WTPH-D Modified

Surrogate	% Recovery	Flags	Recovery Limits	
			Low	High
o-terphenyl	85		50	150

Sample results are on a dry weight basis.

Analyte	Result (mg/kg)	PQL	Flags
Diesel (>nC12-nC24)	110	24	X1
Motor Oil (>nC24-nC32)	510	47	

X1 - Chromatogram suggests this might be heavy oil



# SOUND ANALYTICAL SERVICES, INC.

Lab ID:	Method Blank - DI1811
Date Received:	-
Date Prepared:	11/18/98
Date Analyzed:	11/19/98
% Solids	

## Extended Diesel Range by WTPH-D Modified

Surrogate	% Recovery	Flags	Recovery Limits	
			Low	High
o-terphenyl	82		50	150

Sample results are on an as received basis.

Analyte	Result (mg/kg)	PQL	Flags
Diesel (>nC12-nC24)	ND	20	
Motor Oil (>nC24-nC32)	ND	40	

# SOUND ANALYTICAL SERVICES, INC.

## Duplicate Report

Client Sample ID: 8195-6  
Lab ID: 77075-06  
Date Prepared: 11/18/98  
Date Analyzed: 11/21/98  
QC Batch ID: DI1811

### Extended Diesel Range by WTPH-D Modified

Parameter Name	Sample Result (mg/kg)	Duplicate Result (mg/kg)	RPD %	Flag
Diesel (>nC12-nC24)	110	120	-8.7	
Motor Oil (>nC24-nC32)	510	450	13.0	

# SOUND ANALYTICAL SERVICES, INC.

## Blank Spike/Blank Spike Duplicate Report

Lab ID: DI1811  
Date Prepared: 11/18/98  
Date Analyzed: 11/19/98  
QC Batch ID: DI1811

### Extended Diesel Range by WTPH-D Modified

Compound Name	Blank Result (mg/kg)	Spike Amount (mg/kg)	BS Result (mg/kg)	BS % Rec.	BSD Result (mg/kg)	BSD % Rec.	RPD	Flag
Diesel (>nC12-nC24)	0	502	474	94.4	473	94.1	-0.32	
Motor Oil (>nC24-nC32)	0	500	425	84.9	433	86.5	1.9	

# SOUND ANALYTICAL SERVICES, INC.

ANALYTICAL & ENVIRONMENTAL CHEMISTS

4813 PACIFIC HIGHWAY EAST, TACOMA, WASHINGTON 98424 - TELEPHONE: (253) 922-2310 - FAX: (253) 922-5047

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## DATA QUALIFIERS AND ABBREVIATIONS

- B1: This analyte was detected in the associated method blank. The analyte concentration was determined not to be significantly higher than the associated method blank (less than ten times the concentration reported in the blank).
- B2: This analyte was detected in the associated method blank. The analyte concentration in the sample was determined to be significantly higher than the method blank (greater than ten times the concentration reported in the blank).
- C1: Second column confirmation was performed. The relative percent difference value (RPD) between the results on the two columns was evaluated and determined to be  $\leq 40\%$ .
- C2: Second column confirmation was performed. The RPD between the results on the two columns was evaluated and determined to be  $> 40\%$ . The higher result was reported unless anomalies were noted.
- M: GC/MS confirmation was performed. The result derived from the original analysis was reported.
- D: The reported result for this analyte was calculated based on a secondary dilution factor.
- E: The concentration of this analyte exceeded the instrument calibration range and should be considered an estimated quantity.
- J: The analyte was analyzed for and positively identified, but the associated numerical value is an estimated quantity.
- MCL: Maximum Contaminant Level
- MDL: Method Detection Limit
- N: See analytical narrative.
- ND: Not Detected
- PQL: Practical Quantitation Limit
- X1: Contaminant does not appear to be "typical" product. Elution pattern suggests it may be \_\_\_\_\_.
- X2: Contaminant does not appear to be "typical" product.
- X3: Identification and quantitation of the analyte or surrogate was complicated by matrix interference.
- X4: RPD for duplicates was outside advisory QC limits. The sample was re-analyzed with similar results. The sample matrix may be nonhomogeneous.
- X4a: RPD for duplicates outside advisory QC limits due to analyte concentration near the method practical quantitation limit/detection limit.
- X5: Matrix spike recovery was not determined due to the required dilution.
- X6: Recovery and/or RPD values for matrix spike(/matrix spike duplicate) outside advisory QC limits. Sample was re-analyzed with similar results.
- X7: Recovery and/or RPD values for matrix spike(/matrix spike duplicate) outside advisory QC limits. Matrix interference may be indicated based on acceptable blank spike recovery and/or RPD.
- X7a: Recovery and/or RPD values for this spiked analyte outside advisory QC limits due to high concentration of the analyte in the original sample.
- X8: Surrogate recovery was not determined due to the required dilution.
- X9: Surrogate recovery outside advisory QC limits due to matrix interference.

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77075



# CHAIN OF CUSTODY RECORD

Client/Project Name <i>King County International Airport</i>				Project Location <i>Seattle</i>				<div style="text-align: center;">ANALYSES</div> <div style="text-align: center; border: 1px solid black; padding: 5px;"> <del>WTPH-D EXT</del> </div>										
Work Order No. <i>8195</i>				Field Logbook No.														
Sampler: (Signature) <i>[Signature]</i>				Chain of Custody Tape No.														
Sample No./ Identification	Date	Time	Lab Sample Number	Type of Sample														
1 8195-1	11/16/98			Soil / Composite	X	X												
2 8195-2	11/16/98			Soil / Composite	X	X												
3 8195-3	11/16/98			Soil / Composite	X	X												
4 8195-4	11/16/98			Soil / Composite	X	X												
5 8195-5	11/16/98			Soil / Composite	X	X												
6 8195-6	11/16/98			Soil / Composite	X	X												
Relinquished by: (Signature) <i>[Signature]</i>				Date 11/16/98	Time	Received by: (Signature) <i>M. Hodgman</i>				Date 11/16/98	Time 11:30							
Relinquished by: (Signature)				Date	Time	Received by: (Signature)				Date	Time							
Relinquished by: (Signature)				Date	Time	Received by: (Signature)				Date	Time							
Comments: <i>Fax Results ATTN: Jim Borten</i> <i>@ 253-395-1170</i>					ANALYTICAL LABORATORY <i>5 day TAT</i>													

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